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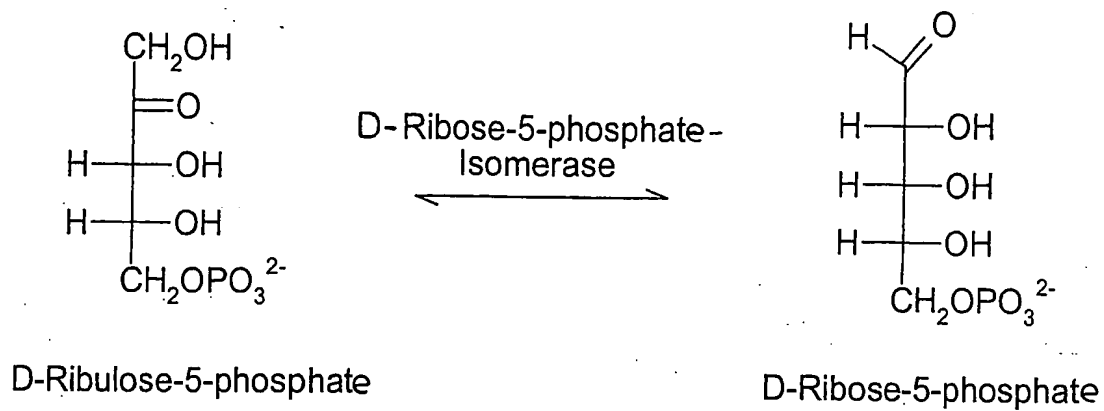
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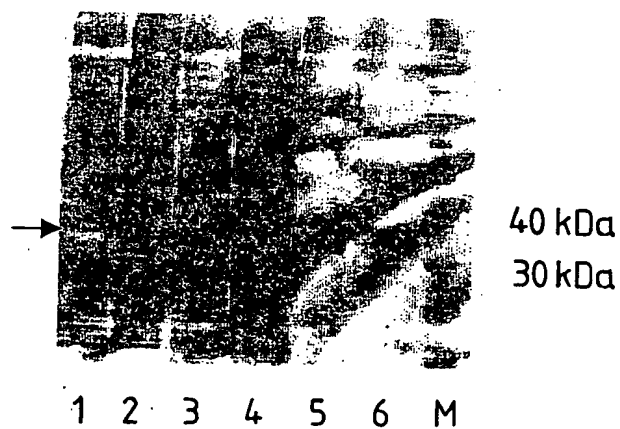


CS-7861/LeA 36,055  
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**Fig. 1**

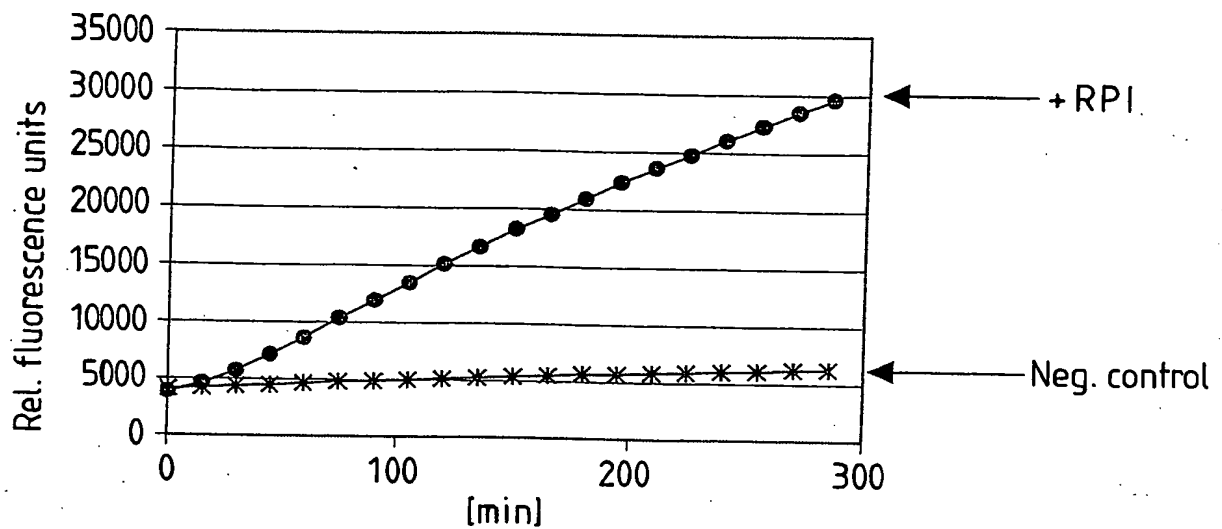


**Fig. 2**

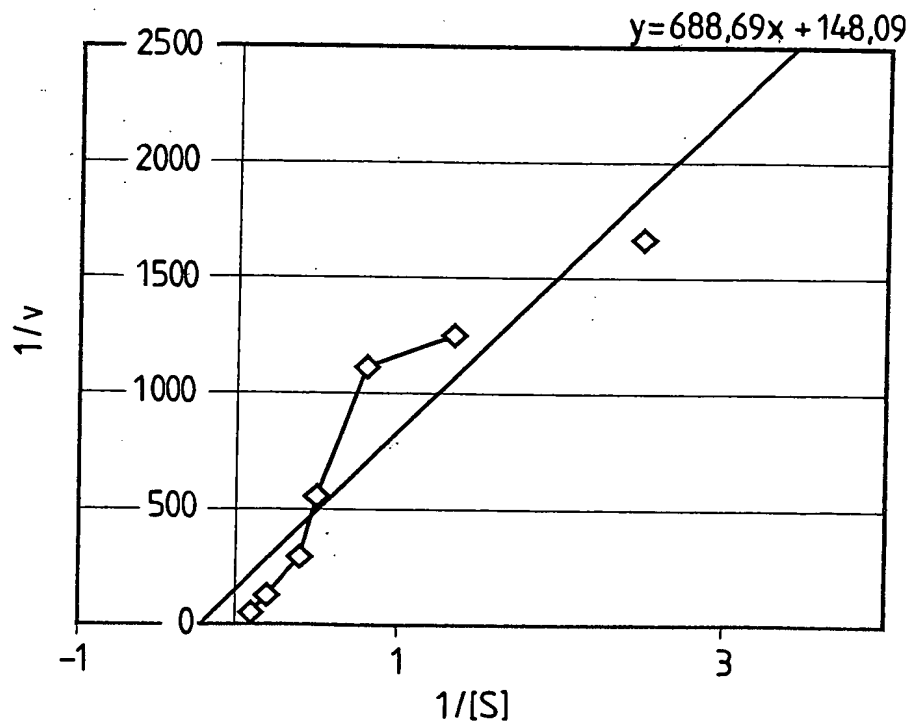


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**Fig. 3**



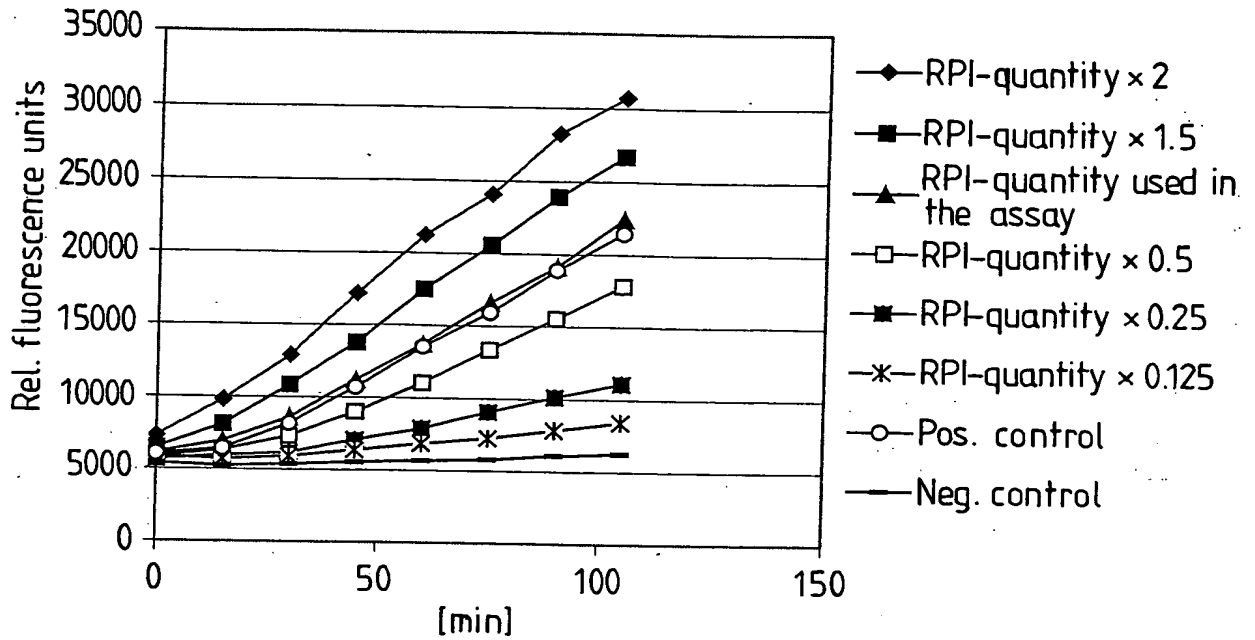
**Fig. 4**



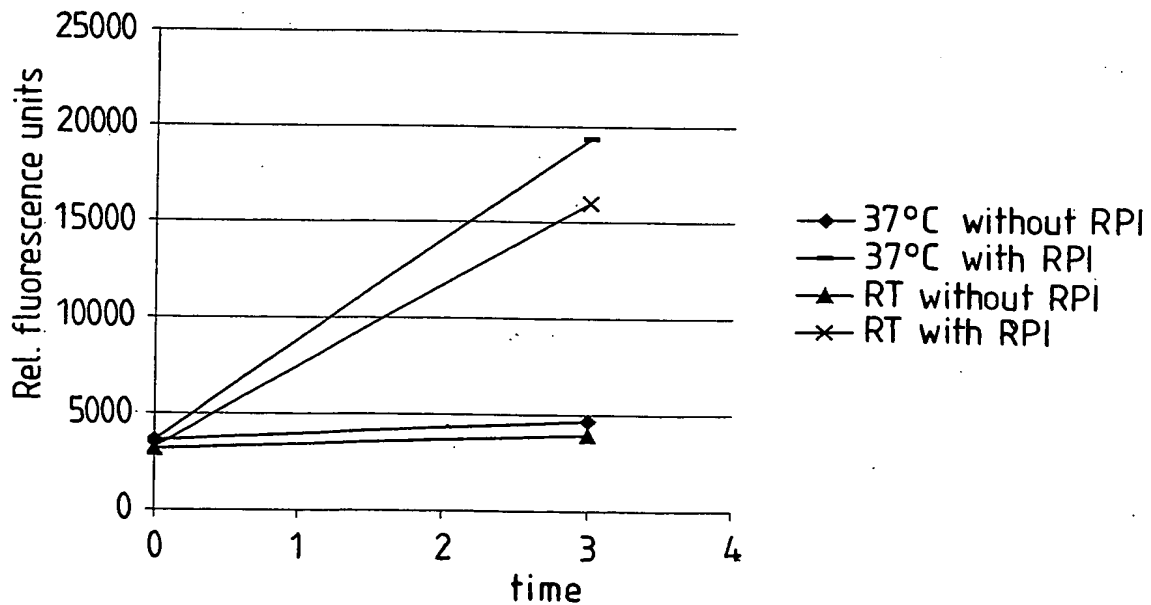


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**Fig. 7**

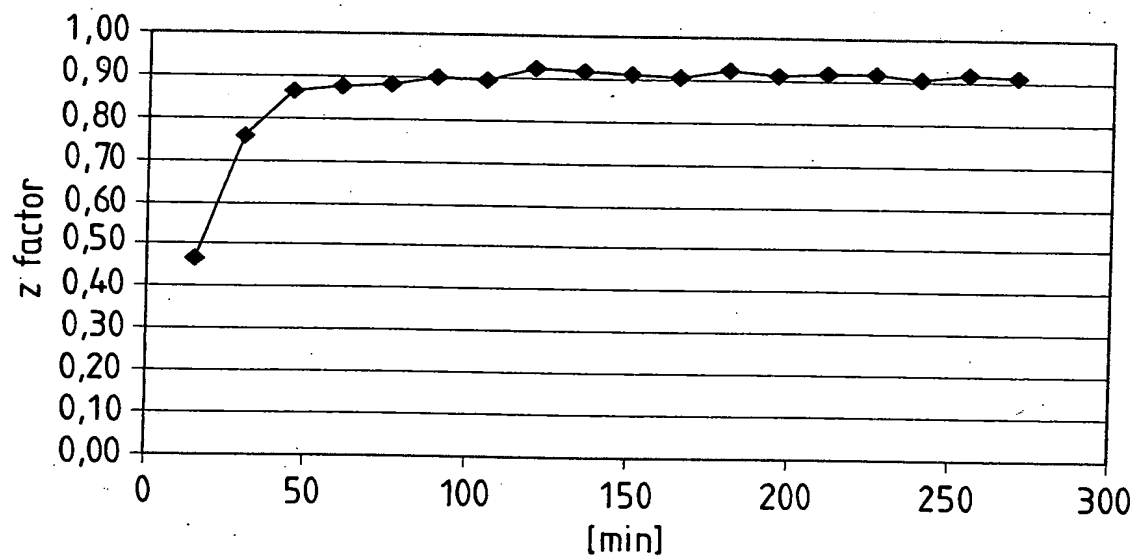


**Fig. 8**



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**Fig. 9**



# Fig. 10A

U. maydis	.....MQSRL LSLVSSHLVS KRCFIARSAA LAPLLLHPQR
LRLTCPRSFS	
S_pombe_144_12	.....
.....	
S_c_RKI1	.....
.....	
mouse_rpi	.....
.....	
drosophila_RPI	MTYGHVACLL QVFVENEINL SPDQSCMNCC GGCHDTRSSG
CYKAEFEFCG	
C_elegans_rpi	.....
.....	
a_thaliana_hyp.RPI	.....
.....	
E.coli_RPIA	.....
.....	

U. maydis	SQQSGPRKMA SSNATNSTSA ASAANTNSSA FKSaelaals
GVDAAKRAAA	
S_pombe_144_12	..... MDSAekkld. ....LS
PIELAKRLAC	
S_c_RKI1	..... MAAGVPKIDA LE....SLGN
PLADAKRAAA	
mouse_rpi	.....MS
KAEAKKLAS	
drosophila_RPI	QQAACKGRLY KCNTIESEN LSGAAATLHT QIR..MMDDI
ALDAAKKTAA	
C_elegans_rpi	.....MVTs TGP..EAELA
PIEQAKKRAA	
a_thaliana_hyp.RPI	.....MAL AYDPLFITSd KSLSAFDVAS SPP..QPMNL
TQDELAKRIAA	
E.coli_RPIA	.....M
TQDELAKAVG	

U. maydis	YAAVDNHVK. PQHEIIGTGS GSTVPYVVER IAQ..QGPav
N...AKRWFV	

# Fig. 10B

S_pombe_144_12	HMAYDENYP.	ENPKVIGIGS	GSTVYVVER	L...LTKPG.
...VDSVFI				
S_c_RKI1	YRAVDENLKF	DDHKIIGIGS	GSTVYVVAER	IGQYLHDPKF
YEASKFICI				
mouse_rpi	HTAVENHVKN	N..QVLIGIGS	GSTIVHAVQR	IAERVKQEN.
....LDLICV				
drosophila_RPI	RTAVDQWVTE	DT.KILIGIGS	GSTVYVAVQR	IAERVWKEGE
...LTDLICV				
C_elegans_rpi	FACGEKYVQS	G..CRLIGIGS	GSTVKYLVEY	LKQGFQNGS.
...LKDIICV				
a_thaliana_hyp.RPI	YKAVEFVES.	G..MVLIGIGS	GSTAKHAVDR	IGELLRQ GK.
...LENIVGI				
E.coli_RPIA	WAALQYVQP.	G..TIVIGIGS	GSTAAHFIDA	LG...TMKG.
....QIEGAV				

U. maydis	PTGFGSRELI	INAGLRLGDV	DSFPSIDVTI	DGADEVBNAL
NCIKGGGACH				
S_pombe_144_12	PTGFGSKOLI	MNGLRLGDP	DCYPNVDSF	DGADEVBDNL
QCIKGGGAGL				
S_c_RKI1	PTGFGSRNLI	LDNKLQLGSI	EQYPRIDIAF	DGADEVBDNL
QLIKGGGAGL				
mouse_rpi	PTSEQAROLI	LQGLTSLDL	DQHPEIDLAI	DGADEVDAEL
NLIKGGGGL				
drosophila_RPI	SSYQARHII	LDYNLNLGDL	DRNPNIIDVAI	DGADEVDRHM
VLIKGGGGL				
C_elegans_rpi	PSFLTKQWL	IESGLPVSDL	DSHPELDVCI	DGADEVGQF
TCIKGGGGL				
a_thaliana_hyp.RPI	PSKKTQEQA	LSLGIPLSDL	DAHVIDLSI	DGADEVDPFL
NLVKGRGGSL				
E.coli_RPIA	SSSDASTEKL	KSLGIHVFDL	NEVDSLGIYV	DGADEVINGHM
QMIKGGGAAL				

U. maydis	LRKVLAEAA	NEFWADYR	KNG.SQIGTK	WLQGVPTLVA
PFAY...AKV				
S_pombe_144_12	FOELKLI AFLA	KRLVIVASR	KNS.HVIGCY	WKKGVPTLVM
PMAY...ASI				



# Fig. 10C

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S_c RKI1	FOEKLVTSA	KTEIIVADS	KKSPKHGKN	WROGVPIHIV
ESSY...VRV				
mouse_rpi	TOEKIVAGYA	SREIIVADF	KDS.KNIGDR	WHKCTPIHVI
PMAY...VPV				
drosophila_RPI	LQEKVVASCA	KHEIIVADYT	KNS.IRIGEQ	WCRCVPIEVA
PMAY...VPI				
C_elegans_rpi	AOEKIVQTAA	KNHYIADYL	KDS.KHIGDR	YPN.VPIEVL
PLAA...QPL				
a_thaliana_hyp.RPI	LRKMIEGAS	KKEIIVVDDS	KMV.KHIGGS	KLA.LPVEIV
PFCWKFTAEC				
E.coli_RPIA	TRKIIASVA	EKEICIADAS	KQV.DILG..	.KFPLPVEVI
PMAR...SAV				
U. maydis	LQNLKK.MGS	DKAVLRMG.K	AKAGPVIIDN	GNEICIDAPFP
E.AQMKDPSD				
S_pombe_144_12	LPQOLVE.LGA	IEPKLRMGAP	GKAGPVIIDN	GNEIIDAHF.
..GLIKNPKE				
S_c RKI1	KNDLLEQLHA	EKVDIRQGS	AKAGPVIIDN	NNFIIDADF.
..GEISDPRK				
mouse_rpi	SRAVAQKEGG	E.VELMA.V	NKAGPVIIDN	GNEIIDWKF.
..DRVHKWSE				
drosophila_RPI	KLHIEALFGG	E.ASLRMA.K	VKAGPIVIDN	GNEIIDWKFV
A.NREYDWDE				
C_elegans_rpi	LRSIPRAEGG	S.COLRQA.V	KKCGPIVIDN	GNEIIDWQFE
KNVSGRDWFA				
a_thaliana_hyp.RPI	LRSLLEGYGC	E.ANLRLG..	EKGKAFVIDN	GNYIIVMHVE
..EDMGDLGA				
E.coli_RPIA	ARQLVK.LGG	R.PEYRQG..	.....VVVIDN	GNVIIDVHG.
..MEILDPIA				
U. maydis	LLKRIKLLTG	VLEVGLFCN.	ICKSAYFGND	DGTITIKTAA
G.....D				
S_pombe_144_12	LFKIKLLVG	VLEVGLFCD.	MISAVMEGSK	DGSVTVKKAS
GEKHIIPAPV				
S_c RKI1	LHREIKLLVG	VLEVGLFID.	NASKAVFGNS	DGSVEVTEK.

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# Fig. 10D

mouse_rpi	VNTAIKMTPG	VDTGLEIN.	MAERVYEGMQ	DG	SVNVREKP
F.....					
drosophila_RPI	VNRAITLIPG	VDTGLEVN.	MAHKCYEGMA	NG	SVKVQNK.
.....					
C_elegans_rpi	IQORLANTPG	VDTGLEIG.	CVDVFFAYS	DG	SVKEIVNS
KKH.....					
a_thaliana_hyp.RPI	VSDAILRLPG	VHEGMLD.	MASTVIIAGE	LG	VKIKNKH
.....					
E.coli_RPIA	MENAINAIPG	VTVGLEANR	GADVALIGTP	DG	VKTIVK.
.....					

U. maydis	VQEGVHFDVS	KAPATA....
S_pombe_144_12	TAAANEVDAK	VAETNAKPLN
S_c_RKI1	.....	.....
mouse_rpi	.....	.....
drosophila_RPI	.....	.....
C_elegans_rpi	.....	.....
a_thaliana_hyp.RPI	.....	.....
E.coli_RPIA	.....	.....

# Fig. 11A

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U_m_RPI1	MQSRLLSLV	SHLVSKRCFI	ARSAALAPLL	LHPQRLRLTC
PRSFSSQQSG	.....	.....	.....	.....
SPAC144_12	.....	.....	.....	.....
.....	.....	.....	.....	.....
SC_RKI1	.....	.....	.....	.....
.....	.....	.....	.....	.....
CRYNE_001022	.....	.....	.....	.....
.....	.....	.....	.....	.....
CANAL_Contig6-2195	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS06G7H	.....	.....	.....	.....
.....	.....	.....	.....	.....
NEUCR_contig	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS06MQK	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS06EST	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS0766C	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS06ZNB	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.CNS06ZLP	.....	.....	.....	.....
.....	.....	.....	.....	.....
embl.KLAJ9603	.....	.....	.....	.....
.....	.....	.....	.....	.....
U_m_RPI1	PRKMASSNAT	NSTSAASAAN	TNSSAFKSAE	LAALSGVEA
KRAAAYAAMD	.....	.....	.....MDSA	EKLDLSPIEL
SPAC144_12	.....	.....	.....	.....
KRLACHMAVD	.....	.....	.....M	AAGVPKIDAL
SC_RKI1	.....	.....	.....	ESLGNPLED
KRAAAYRAVD	.....	.....	.....	.....
CRYNE_001022	.....	.....	.....	.....
.....	.....	.....	.....	.....
CANAL_Contig6-2195	.....	.....	.....	MSSTSKVES
KKLAAYKAVD	.....	.....	.....	.....
embl.CNS06G7H	.....	.....	.....	.....

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```

U_m_RPI1          NHVK.PQHEI  IGIISGSIIVP YWERTLAQQG .....PAVNA
KRWFVPTIGFO
SPAC144 12        ENYP.ENPKV  IGIISGSIIVP YWERTLLT.. .....KPGVD
SVVFLPTIGFO
SC_RKI1           ENLKFDHDKI  IGIISGSIIVP YVAERTIGQYL HDPKFYEVAS
KFICPTIGFO
CRYNE 001022      .....QQQV  IGIISGSIIVP YVDRILAQQG .....FEANK
DRVFLPTIGFO
CANAL Contig6-2195  ENFP.KDAKV  IGIISGSIIVP YVAERTIGQ.. .....LDNKD
SFICPTIGFO
embl.CNS06G7H     .....EHKI  IGIISGSIIVP YVAERTIGQYL QDSQYSDLVS
KFVCLPTIGFO
NEUCR contig      EHLS.PTYRH  IGIISGSIIVP YVDRISKLK .....TTITG
PMTFYPTIGFO
embl.CNS06MQK     .....
.....
embl.CNS06EST     .....QHRV  IGIISGSIIVP YVAERTIGQYL RDDEYRDYVS
KFKCVAICYO
embl.CNS0766C     .....
.....
embl.CNS06ZNB     .....
.....
embl.CNS06ZLP     .....

```

# Fig. 11C

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.....  
embl.KLAJ9603  
.....

U m RPI1

**IKGGGAC**HLR

SPAC144\_12

**IKGGGAC**L FQ

SC RKI1

**IKGGGAC**L FQ

CRYNE 001022

**IKGGGAC**QLR

CANAL Contig6-2195

**IKGGGAC**L FQ

embl.CNS06G7H

**IKGGGAC**L FQ

NEUCR contig

**IKGGGAC**LLQ

embl.CNS06MQK

**IKGGGAC**L FQ

embl.CNS06EST

**IKGGGG**L FQ

embl.CNS0766C

**IKGG**.....Q

embl.CNS06ZNB

**IKGGGAC**L FQ

embl.CNS06ZLP

**IKGXGAX**XLQ

embl.KLAJ9603

.....VQ

U\_m\_RPI1

SPAC144\_12

SC\_RKI1

CRYNE\_001022

**SRELT**INAG**T** **RLGDV**.**ESFP** ...**S****EDVTI****DC** **ADEVD**NA**INC**

**SKQLT**IVNNG**T** **RLGDP**.**DCYP** ..**NVD**VS**FDG** **ADEVD**DN**IQC**

**SRNLT**LDNK**T** **QLGSI**.**EQYP** ..**R****EDTAF****DC** **ADEVD**EN**QL**

**SKELT**IVKAG**T** **TIGDV**.**DOYA** ..**R****EDVTI****DC** **ADEVD**NE**INS**

**SKQLT**IDNG**T** **RLGTI**.**EQYP** ..**D****EDTAF****DC** **ADEVD**PO**INL**

**SRNLT**LDNK**T** **QLGSI**.**EQYP** ..**R****EDTAF****DC** **ADEVD**EN**QL**

**SRDLT**QAAG**F** **RLCYLS****DLSP** **GHALD**V**CFDC** **ADEVD**PA**INL**

**I**...**I**.....**I**.**DOYP** ..**NVD**IA**FDG** **ADEVD**AN**QL**

**SKQLT**MDNG**T** **TYAIL**.**EQHP** ..**H****EDTAF****DC** **ADTID**CN**IDL**

**RQLT**IDNW**X** **RLGST**.**LEYF** ..**E****EDTAF****DC** **ADTID**SN**IGL**

.....**I**.**YH** ..**E****EDTAF****DC** **ADEVD**EN**QL**

.....**EQYP** ..**E****EDTAF****DC** **ADEVD**EN**QL**

**EKL**LAEA**ANE** **FWVAD**YR**KN** **G**.**SQ**LG**T**...

**EKL**IAFL**AKR** **LVVAD**SR**KN** **S**.**HV**IG**EY**...

**EKL**VST**SAKT** **FWVAD**SR**KK** **SPKH**LG**KN**...

**EKL**LAEA**ADT** **WVAD**YR**KN** **S**.**EV**LG**TSVR** **AFL**SC**LEDQT**

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## Fig. 11D

NAMSLFSLYL

CANAL\_Contig6-2195

EKLVAASAKK EKLVAADYRKK SDK.EGQL.. ..

embl.CNS06G7H

EKLIVSTSAKT EKLIVADSRKK SPKHGKN.. ..

NEUCR\_contig

EKLIVATAARK EKLIVADSRKI S.NHIGTQ.. ..

embl.CNS06MQK

EKLIVSTSTDK EKLIVADSRKK SPQYIGTS.. ..

embl.CNS06EST

EKLIVSTSAKI EKLIVADTSKK SPRRIGSH.. ..

embl.CNS0766C

EKLIVAACSKQ EKLIVADYRKK T.GVIGKG.. ..

embl.CNS06ZNB

EKLIVSTSAKK EKLIVADSRKR SPKHGKN.. ..

embl.CNS06ZLP

EKLIVXTXAKK EKLIVADSRKR XXXKHGKN.. ..

embl.KLAJ9603

EKLIVSTSAKK EKLIVADSRKK SPKYIGTN.. ..

U\_m\_RPI1

..... KKLQG VPLEIVAFAM AKVLQN....

SPAC144\_12

..... WKKG VPLEIVPMAM ASILPQ....

SC\_RKI1

..... WRQG VPLEIVPSSY VRVKND....

CRYNE\_001022

FIRFPMTPIE LIASPKATKG IPLEIVPFAM AKVLTN....

CANAL\_Contig6-2195

..... WRQG VPLEIVPNSY SKIIQE....

embl.CNS06G7H

..... WRQG VPLEIVPSAY VRVKND....

NEUCR\_contig

..... WKKG IPLEIVPMAM PQVLGE....

embl.CNS06MQK

..... WKKG VPLEIVPSSY VRVSKD....

embl.CNS06EST

..... IVQG VPLEIVPAAY NRVQDD....

embl.CNS0766C

..... WRKG VPLEIVPAAY TKVSLD....

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## Fig. 11E

.....	
embl.CNS06ZNB	.....WKRGVPLEWVPSYVHVLTA....
.....	
embl.CNS06ZLP	.....WKRGVPLEWVPSYDRAVAR....
KRGPWLRITA	
embl.KLAJ9603	.....WKKGVPLEWVPSYVRVLSL....
.....	
U_m_RPI1	.....
.....	
SPAC144_12	.....
.....	
SC_RKI1	.....
.....	
CRYNE_001022	.....
.....	
CANAL_Contig6-2195	.....
.....	
embl.CNS06G7H	.....
.....	
NEUCR_contig	.....
.....	
embl.CNS06MQK	.....
.....	
embl.CNS06EST	.....
.....	
embl.CNS0766C	.....
.....	
embl.CNS06ZNB	.....
.....	
embl.CNS06ZLP	TSSLTLTFGE ..IADPRKLH QDIKMLVGVV ETGLFIDNAE
KAYFGSPDGS	
embl.KLAJ9603	.....
.....	
U_m_RPI1	.....L KKMGS.....DKAVLRM
GKAYAG..PV	
SPAC144_12	.....L VELGAI....EPKLRMG

# Fig. 11F

APGKAG..PV	
SC RKI1	.....LL EQLHAE.... ...KVDIRQG
GSAGAG..PV	
CRYNE 001022	.....L AHMGSPHVLP NGQPGLSLRM
GKMAG..PV	
CANAL Contig6-2195	.....LS KKLGA.... ...NVDLRQG
GKAG..PV	
embl.CNS06G7H	.....LL EQLHAD.... ...KVDIRQG
GSAGAG..PV	
NEUCR contig	.....L ERLGRL.... ...SAQVRSG
LPGKAG..AC	
embl.CNS06MQK	.....LR EKLGSR.... ...KAEVRQG
GSAGAG..PV	
embl.CNS06EST	.....LL NLLGAK.... ...TATLRQG
GKVKMG..PV	
embl.CNS0766C	.....L VKLGG.... ...KPVVRSG
LPAKAG..PV	
embl.CNS06ZNB	.....LK DRLHCK.... ...SAIVRQG
GSAGAG..PV	
embl.CNS06ZLP	VELQLKCCPV PMWHVLTALK DRLHCK.... ...SAIVRQG
GSAGAG..PV	
embl.KLAJ9603	.....LK NKLNCK.... ...SAMVRQG
.....	

U m RPI1	VTDNGNEICTD APPEAQMKD PS..... ...DILKR
IKLITGVLEV	
SPAC144 12	VTDNGNEIID AHGLIK..N PKE..... ...IFAK
IKLIVGVVET	
SC RKI1	VTDNNEIID ADGE..ISD PRK..... ...IHRE
IKLIVGVET	
CRYNE 001022	VSDNGNEIID APFAEELMRQ PEE..... ...VILHK
IKMITGVVET	
CANAL Contig6-2195	VDNNEILLD ADGEIEIDN VGK..... ...IHEQ
IKLIVGVET	
embl.CNS06G7H	VTDNSNEIID ADGE..IKD PRT..... ...IHRD
IKLIVGVET	
NEUCR contig	VTDNGLRIVD AVEKPLLTEL PEGKQEGEEG VWTVDGARR
IKETPGVAH	
embl.CNS06MQK	VTDNSNEIID ADGEIQ..D PKK..... ...IHQD



# Fig. 11G

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IKMIVGVVET  
embl.CNS06EST  
IKMIVGVVET  
embl.CNS0766C  
IKMIVGVVET  
embl.CNS06ZNB  
IKMIVGVVET  
embl.CNS06ZLP  
.....  
embl.KLAJ9603  
.....

U\_m\_RPI1  
QEGVHFDVSK  
SPAC144\_12  
HIIPAPVTAA  
SC\_RKI1  
.....  
CRYNE\_001022  
.....  
CANAL\_Contig6-2195  
.....  
embl.CNS06G7H  
.....  
NEUCR\_contig  
.....  
embl.CNS06MQK  
.....  
embl.CNS06EST  
.....  
embl.CNS0766C  
.....  
embl.CNS06ZNB  
.....  
embl.CNS06ZLP  
.....  
embl.KLAJ9603  
.....

VTDNNEILD THIGD..IDD PKK.....LHDN  
VTDNNEILD CDIGEIPPAQ VAE.....ENAK  
VTDNNEILD ADIGE..IAD XRK.....HQD  
VTDNNEILD AD.....  
.....

GLFCNI....CK SAYFCNDGDT ITIKTAAGDV  
GLFCDM....IS AVFCGSKDGS VTVKKASGEK  
GLCIDN....AS KAYFCNSDGS VEVTEK....  
GLFCGM....AK AAYFCNE.....  
GLFTNM....AN KAYFCGEDGS VSV.....  
GLCIDN....AS KAYFCNSDGT .....  
GLFYGKSGLE VESGGAQKPV AAYFCMEDGS VMVQT.....  
GLCIDN....AC KAYFCNADGT VEV.....  
GLFIGN....AA KAYLCSPDGD VLI.....  
GLFVSL....AS KAYICNADGT ITKKT.....  
GLCIDN....AE KAYFCSPDGS VELQ.....  
.....  
.....

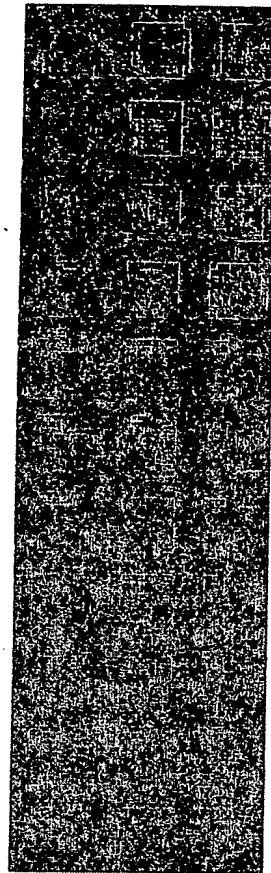
## Fig. 11H

---

U_m_RPI1	APATA.....
SPAC144_12	ANEVDAKVAE TNAKPLN
SC_RKI1	.....
CRYNE_001022	.....
CANAL_Contig6-2195	.....
embl.CNS06G7H	.....
NEUCR_contig	.....
embl.CNS06MQK	.....
embl.CNS06EST	.....
embl.CNS0766C	.....
embl.CNS06ZNB	.....
embl.CNS06ZLP	.....
embl.KLAJ9603	.....

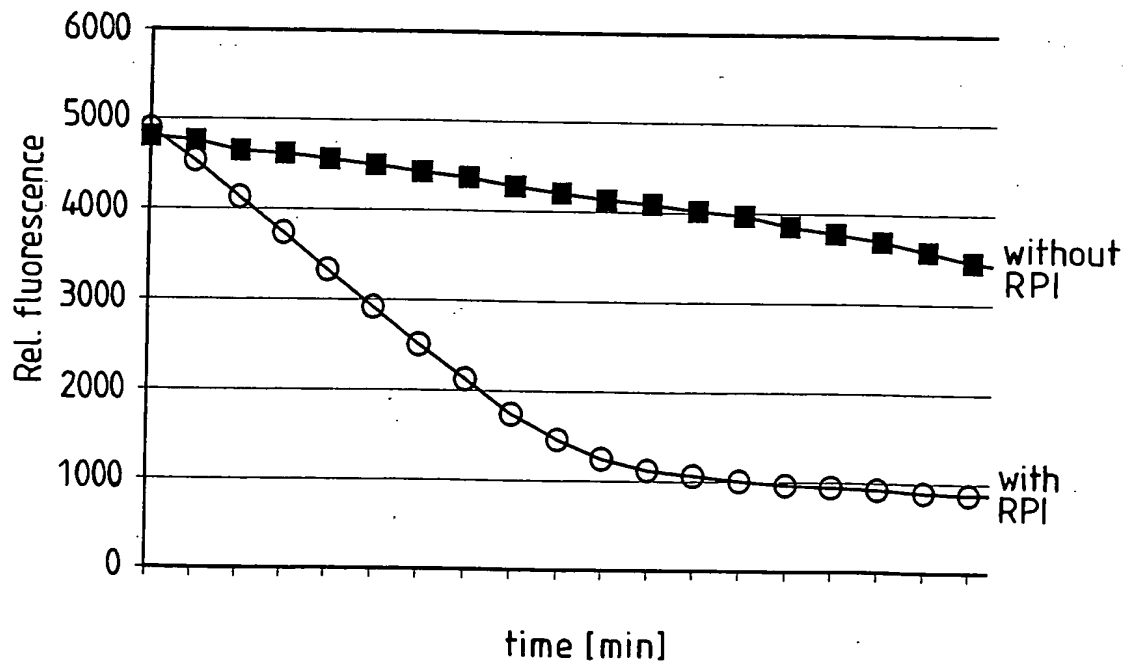
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**Fig. 12**



← 20 mM Ribose-5-phosphate

**Fig. 13**



**Fig. 14**

